United States
Department of
Agriculture

Natural
Resources
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Service

Idaho
Basin Outlook Report
March 1, 1999

Basin Outlook Reports
and
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http://idsnow.id.nrcs.usda.gov/

How forecasts are made

Most of the annual streamflow in the western United States originates as snowfall that has accumulated in the mountains during the winter and early spring. As the snowpack accumulates, hydrologists estimate the runoff that will occur when it melts. Measurements of snow water equivalent at selected manual snow courses and automated SNOTEL sites, along with precipitation, antecedent streamflow, and indices of the El Niño / Southern Oscillation are used in computerized statistical and simulation models to prepare runoff forecasts. These forecasts are coordinated between hydrologists in the Natural Resources Conservation Service and the National Weather Service. Unless otherwise specified, all forecasts are for flows that would occur naturally without any upstream influences.

Forecasts of any kind, of course, are not perfect. Streamflow forecast uncertainty arises from three primary sources: (1) uncertain knowledge of future weather conditions, (2) uncertainty in the forecasting procedure, and (3) errors in the data. The forecast, therefore, must be interpreted not as a single value but rather as a range of values with specific probabilities of occurrence. The middle of the range is expressed by the 50% exceedance probability forecast, for which there is a 50% chance that the actual flow will be above, and a 50% chance that the actual flow will be below, this value. To describe the expected range around this 50% value, four other forecasts are provided, two smaller values (90% and 70% exceedance probability) and two larger values (30%, and 10% exceedance probability). For example, there is a 90% chance that the actual flow will be more than the 90% exceedance probability forecast. The others can be interpreted similarly.

The wider the spread among these values, the more uncertain the forecast. As the season progresses, forecasts become more accurate, primarily because a greater portion of the future weather conditions become known; this is reflected by a narrowing of the range around the 50% exceedance probability forecast. Users should take this uncertainty into consideration when making operational decisions by selecting forecasts corresponding to the level of risk they are willing to assume about the amount of water to be expected. If users anticipate receiving a lesser supply of water, or if they wish to increase their chances of having an adequate supply of water for their operations, they may want to base their decisions on the 90% or 70% exceedance probability forecasts, or something in between. On the other hand, if users are concerned about receiving too much water (for example, threat of flooding), they may want to base their decisions on the 30% or 10% exceedance probability forecasts, or something in between. Regardless of the forecast value users choose for operations, they should be prepared to deal with either more or less water. (Users should remember that even if the 90% exceedance probability forecast is used, there is still a 10% chance of receiving less than this amount.) By using the exceedance probability information, users can easily determine the chances of receiving more or less water.

IDAHO WATER SUPPLY OUTLOOK REPORT

March 1, 1999

SUMMARY

Snowpack levels in the northern 2/3s of Idaho are approaching or exceeding 1997 levels and nearing the record high snow values of 1974, 1972 and 1965. Idaho residents should be prepared for high streamflows this spring and summer runoff season. Spring/summer runoff volumes are forecast at 120-165% of average across the northern 2/3s of Idaho with some streams possibly yielding record high runoff volumes. Many snow measuring stations north of the Snake River are reporting a snowpack of 130-180% of the March 1 average. **These high snowpack percentages, this late in the season, are a warning sign to prepare for high summer streamflows and the possibility of high peak flows.** Each storm system that enters the state in the next month or two will only add to an already high snowpack and further increase the potential for high peak flows and flooding when the snow begins to melt.

This is what we know:

In 1997, the snowpack reached near record high levels after a tremendous amount of precipitation fell in December 1996 and January 1997; however; below normal precipitation fell during the remaining winter months in 1997. ***This year's above normal and some record high snowpacks is a result of a steady stream of moisture brought into the state since last November and is consistent with the weather pattern in La Nina years.*** Snow measuring stations have gradually but steadily increased all winter and are starting to exceed their 1997 levels. Snow measuring sites in the headwaters of the Weiser, Mann and Little Salmon are at record high March 1 levels. Roof snowloads are also a concern in this area and could increase suddenly if rain were to fall on this deep snowpack. (More snowload information is available on our Web page.) **Local communities and water managers should monitor conditions closely during the next few months and be prepared for high water and flooding especially if more snow records are broken.**

Below freezing mountainous temperatures in February kept freezing levels fairly low (around 4,500 feet) allowing mid-elevation snowpacks to increase from above average conditions last month to well above average this month. Mid-elevation sites, which cover a large portion of some basins and generate a large amount of the snowmelt runoff, are 150-180% of average at Copper Basin (Big Lost basin), Bogus Basin, Bogus Basin Road (Boise), Prairie (South Fork Boise), Lakefork (near McCall), and Fourth of July Pass (Panhandle). **Snow measuring stations in the 4,700-6,200 feet elevation zone are at or above record high levels in the Weiser, Payette, and Boise basins.**

The unknowns that will determine how wet Idaho gets this year and how high streams peak are: Additional snowfall the next two months, spring air temperatures, precipitation during the critical snowmelt period, and the snow melt sequence.

The National Weather Service's extended climatic outlook for March is for warmer than normal temperatures over Idaho, with precipitation near normal. For the 90 days from March 1 through the end of May, chances are higher than normal for above normal temperatures and precipitation.

A gradual warming in the spring would allow the snow to melt in an orderly manner. Mid-elevation snowmelt before the higher elevation snow starts melting would help reduce the magnitude of streamflow peaks. This would result in multiple streamflow peaks versus one large peak. Mid-elevation and higher elevation snowmelt have combined to generate high peaks flows in Salmon Falls Creek in 1984 and other drainages in Idaho, as well.

Nearly all SNOTEL stations north of the Snake River have already exceeded their maximum average snow water content levels that typically occur in early to mid-April. Any additional snowfall or spring rains will increase the likelihood of the already high streamflows that are projected. **Stay tuned** and keep you mouse clicked on our Internet Web page to keep you aware of daily changes at Idaho's snow measuring stations. Internet address: **http://idsnow.id.nrcs.usda.gov/snow/snotel.htm**

SNOWPACK

The Weiser, Mann Creek, and North Fork Payette basins have record high snowpacks for March 1, 172% of average. The Little Salmon basin is 160% of average, highest since 1974. The Priest River and Moyie basins are about 160% of average and higher than in 1997. Snowpacks in the Coeur d'Alene, Clearwater and Main Salmon, Main Payette, Boise, Wood, and Lost basins are 135-145% of average and nearing the levels of 1997. Snowpacks in the upper Snake basin and south of the Snake River range from 105-115% of average, except the Owyhee basin which is 170%.

New March 1 record high snow water content equivalent amounts are occurring at individual sites across the state: Benton Springs (Priest basin); Brundage Reservoir, Squaw Flat (Payette); Bear Saddle and Placer Creek (Weiser). Many other stations in the Panhandle, Clearwater, Salmon and Payette basins are at or have exceeded their March 1, 1997, levels and are approaching their record high snow years. If the moisture continues for the next 1-2 months, some snow measuring sites may even set new records for the most snow water ever measured. During high snow years, the snow may not peak until late April or early May. The most snow water ever measured in Idaho was 116 inches on May 1, 1974, at Bear Mountain (Panhandle Region). As of March 1, Bear Mountain had 86 inches of snow water, 169% of average.

PRECIPITATION

Numerous winter storms moving through Idaho in February brought more than 2 to 3 times the normal February precipitation amounts in the northern 2/3s of Idaho. February precipitation was 220-230% of average percentages in the west-central and central basins. February precipitation was 190-205% of average in the Panhandle, Clearwater and Salmon basins. The upper Snake and Bear received 160-170% of average in February precipitation, while the basins south of the Snake River received 120%. Heavy snowfall is causing problems with snow plugs developing inside some of the SNOTEL precipitation rain gages and nearly burying some gages that are 16 to 20 feet tall.

RESERVOIRS

Statewide, most reservoirs or reservoir systems are well above average storage and 60-75% full. Outflows are increasing from many reservoirs across the state in order to maintain adequate flood control space during the snow melt season. Dworshak Reservoir will be emptied to minimum pool (1,452,000 acre-feet) by the end of March. The Payette and Boise reservoir systems are about 70% full, and releases are increasing. Little Wood Reservoir will be drained by April 1. Magic Reservoir is 70% full; Mackay Reservoir is 80% full and drafting slightly. The combined storage for the 8 major reservoirs in the upper Snake River basin is 76% of capacity, 105% of average. Oakley Reservoir is 58% full and monitoring conditions closely to see if additional releases are needed. Salmon Falls Reservoir is 44% of capacity and still has plenty of storage available. Storage in Coeur d'Alene and Priest lakes are near normal while Pend Oreille Lake is above normal to see if increased winter storage levels will improve kokanee salmon nesting areas. **Reservoir operators and water managers may wish to base their *risk level* on the 30% or 10% Chance of Exceeding Forecast this year as a result of abundant snowpacks and above normal precipitation the past few years which has recharged soil moisture and springs and kept last summer and fall baseflows at above normal levels.**

Note: NRCS reports reservoir information in terms of usable volumes, which includes both active, inactive, and in some cases dead storage. Other operators may report reservoir contents in different terms. For additional information, see the reservoir definitions in the back of this report.

STREAMFLOW

Water users can expect high runoff volumes in basins north of the Snake River. Some areas are looking at the possibility of record high runoff in the west-central mountains. Most probable streamflow forecasts in the North Fork Payette are for 150% of average for the April-July period; historic maximum runoff is 170% in 1974. The Weiser River is forecast at 165% of average. North Idaho steams are in similar predicament with Coeur d'Alene, St. Joe and Dworshak Reservoir inflow forecasts at 135-140% of average. Other streams north of the Snake River are forecast at 120-140% of average. Upper Snake streams are projected at 115-135% of average. Streams south of the Snake River are forecast at near normal runoff except for Owyhee Reservoir inflow which is forecast at 177% of average. River levels will be high for an extended period of time this summer; high peak flows are also possible, especially if rain occurs during the critical snowmelt season.

RECREATION

Abundant moisture and cold mountainous temperatures in February are making over snow travel difficult in ungroomed areas of Idaho's mountains. Deep power and near record snow levels prevented snow surveyors from measuring some of Idaho's long-term and nearly historic snow sites in northern Idaho this month. Deep snowpacks have given winter recreationists plenty of snow to play on but has also increased avalanche dangers and occasionally closed roads throughout Idaho. **Snowpacks are pushing 10 feet deep in the Boise basin, 12 feet in Payette basin, and 20 feet deep in the Idaho Panhandle Region.** Snow surveyors are finding many of the 12- and 16- foot tall SNOTEL buildings buried! Some sites are completely buried but still transmitting data!

Near record high snowpacks also bring the potential for high peak flows, an extended period of high water, and a boating season that extends well into mid- to late summer. River runners will remember that in 1997, a year with similar snowpacks to this year, high flows occurred for a longer period of time before decreasing to desirable boating levels. Caution should be used as changing river levels may occur suddenly if putting on the river before, during, or immediately after the seasonal snowmelt peak. Any additional spring precipitation may generate rapid changes in streamflow levels.

IDAHO SURFACE WATER SUPPLY INDEX (SWSI)
As of March 1, 1999

The Surface Water Supply Index (SWSI) is predictive indicator of surface water availability within a watershed for the spring and summer water use season. The index is calculated by combining pre-runoff reservoir storage (carryover) with forecasts of spring and summer streamflow. SWSI values are scaled from +4.1 (abundant supply) to -4.1 (extremely dry), with a value of zero indicating a median water supply as compared to historical occurrences.

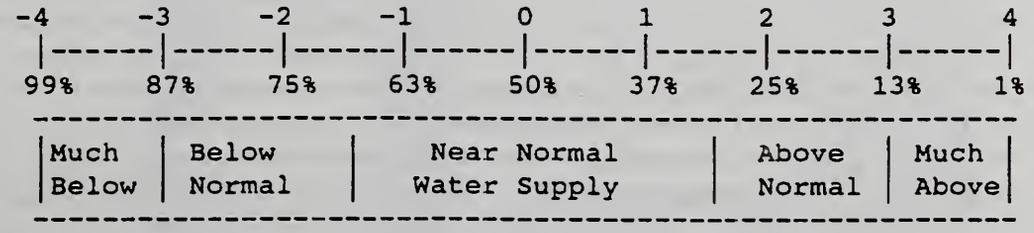
SWSI values are published January through May, and provide a more comprehensive outlook of water availability than either streamflow forecasts or reservoir storage figures alone. The SWSI index allows comparison of water availability between basins for drought or flood severity analysis. Threshold SWSI values have been established for most basins to indicate the potential for agricultural water shortages.

The following agencies and cooperators provide assistance in the preparation of the Surface Water Supply Index for Idaho:

US Department of Commerce, National Weather Service
US Bureau of Reclamation
Idaho Water Users Association
US Army Corps of Engineers
Idaho Department of Water Recourses
PacifiCorp

BASIN or REGION	*SWSI Value*	*Recent Year With Similar SWSI Value*	*Agricultural Water Supply Shortage May Occur When SWSI is Less Than*
PANHANDLE	3.3	1964	NA
CLEARWATER	2.9	1976	NA
SALMON	3.0	1976	NA
WEISER	* 4.0 *	1971	NA
PAYETTE	3.2	1996	NA
BOISE	1.6	1995	-2.6
BIG WOOD	2.6	1995	-1.4
LITTLE WOOD	2.6	1984	-2.1
BIG LOST	2.0	1986	-0.8
LITTLE LOST	2.1	1976	0.0
HENRYS FORK	2.0	1993	-3.3
SNAKE (AMERICAN FALLS)	2.1	1996	-2.0
OAKLEY	2.4	1985	0.0
SALMON FALLS	2.6	1996	0.0
BRUNEAU	-1.1	1985/91	NA
OWYHEE	3.6	1986	NA
BEAR RIVER	0.1	1997	-3.8

SWSI SCALE, PERCENT CHANCE OF EXCEEDANCE, AND INTERPRETATION

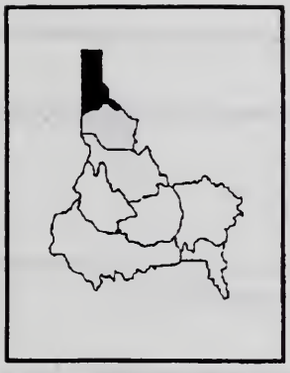


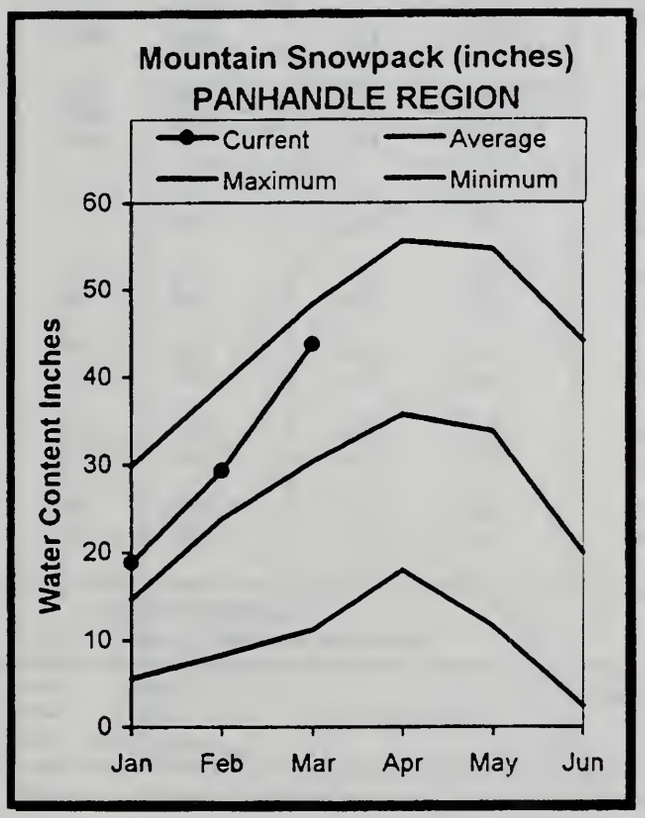
Note: The Percent Chance of Exceedance is an indicator of how often a range of SWSI values might be expected to occur. Each SWSI unit represents about 12% of the historical occurrences. As an example of interpreting the above scale, the SWSI can be expected to be greater than -3.0, 87% of the time and less than -3.0, 13% of the time. Half the time, the SWSI will be below and half the time above a value of zero. The interval between -1.5 and +1.5 described as "Near Normal Water Supply", represents three SWSI units and would be expected to occur about one third (36%) of the time.

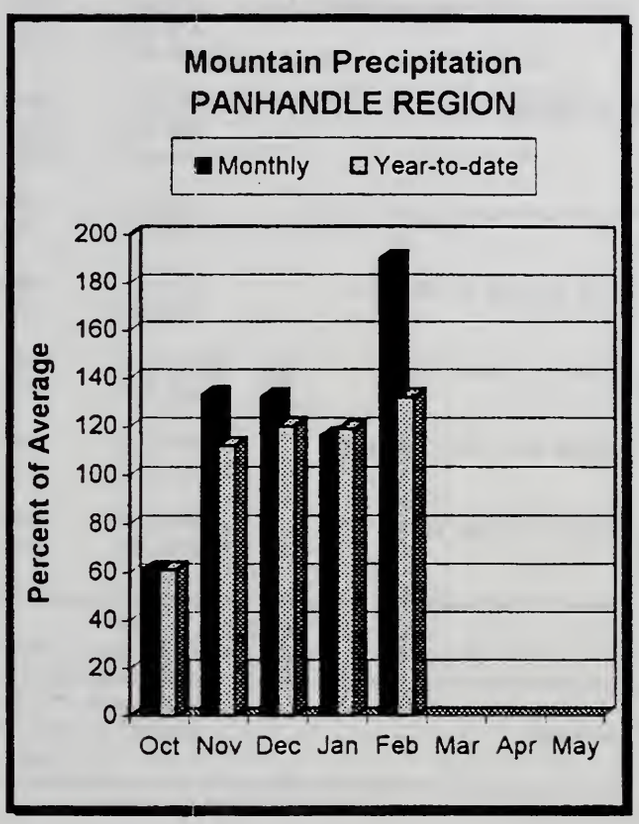
IDAHO – BASIN-WIDE SNOWPACK SUMMARY			
All Percentages are Based on Provisional Data Values			
	1-Mar-99	1-Mar-97	1-Mar-98
	PERCENT OF	PERCENT OF	PERCENT OF
BASIN	AVERAGE	AVERAGE	AVERAGE
Kootenai ab Bonners Ferry	140%	128%	74%
Moyie River	142%	126%	77%
Priest River	178%	152%	87%
Pend Oreille River	128%	149%	74%
Rathdrum Creek	163%	173%	105%
Hayden Lake	146%	190%	96%
Coeur d'Alene River	138%	155%	79%
St. Joe River	131%	158%	76%
Spokane River	140%	159%	82%
Palouse River	133%	151%	76%
North Fork Clearwater	143%	146%	72%
Lochsa River	139%	140%	73%
Selway River	129%	143%	78%
Clearwater Basin Total	139%	146%	74%
Salmon River ab Salmon	136%	161%	87%
Lemhi River	121%	144%	89%
Middle Fork Salmon River	138%	143%	81%
South Fork Salmon River	148%	139%	87%
Little Salmon River	166%	130%	93%
Salmon Basin Total	140%	147%	87%
Mann Creek	173%	103%	120%
Weiser River	172%	114%	107%
North Fork Payette	160%	140%	97%
South Fork Payette	136%	139%	88%
Payette Basin Total	151%	140%	95%
Middle & North Fork Boise	134%	157%	92%
South Fork Boise River	138%	153%	99%
Mores Creek	154%	144%	107%
Boise Basin Total	142%	148%	99%
Canyon Creek	164%	118%	129%
Big Wood ab Magic	128%	167%	89%
Camas Creek	159%	135%	112%
Big Wood Basin Total	137%	158%	96%
Little Wood River	138%	177%	95%
Fish Creek	147%	130%	92%
Big Lost River	141%	177%	88%
Little Lost River	137%	153%	87%
Birch-Medicine Lodge Creeks	137%		97%
Camas-Beaver Creeks	124%	117%	92%
Henrys Fork-Falls River	132%	161%	87%
Teton River	119%	159%	96%
Snake above Jackson Lake	129%	159%	92%
Gros Ventre River	120%	148%	99%
Hoback River	113%	149%	88%
Greys River	112%	147%	87%
Salt River	116%	141%	98%
Snake above Palisades	124%	154%	93%
Willow Creek	128%	172%	116%
Blackfoot River	114%	147%	102%
Portneuf River	114%	156%	121%
Snake abv American Falls Re	122%	156%	99%
Raft River	112%	160%	135%
Goose-Trapper Creeks	117%	162%	114%
Salmon Falls Creek	103%	145%	97%
Bruneau River	103%	147%	103%
Owyhee Basin Total	170%	141%	119%
Smiths & Thomas Forks	109%	150%	94%
Bear River ab WY-ID line	106%	150%	94%
Montpelier Creek	110%	142%	92%
Mink Creek	107%	152%	115%
Cub River	110%	183%	124%
Bear River ab ID-UT line	106%	155%	104%
Malad River	106%	172%	128%

Prepared by DATA COLLECTION OFFICE - IDAHO 3/5/99

PANHANDLE REGION
MARCH 1, 1999







WATER SUPPLY OUTLOOK

Wet and windy weather brought high winds and 190% of average precipitation to the Panhandle Region in February. Wind gusts exceeding 100 mph on ridge tops redistributed newly fallen snow in early February. High winds also deposited a thin layer of soil that was noticeable in the higher elevation snowpack from Schweitzer Basin to Silver Mountain ski areas. Warm temperatures allowed rain to fall in the valleys, however, once you start increasing in elevation the snowpack builds quickly. Bear Mountain, SNOTEL site, located 15 miles north of Clark Fork at 5,400 feet in elevation, has 86 inches of snow water, 169% of average and an estimated snow depth of 20 feet. This site peaked at 93 inches of snow water on April 24, 1997. **Benton Spring, located 10 miles north of Priest River at 4,920 feet, has the highest March 1 snow water content ever measured since records started in 1936.** Basin-wide snowpack percentages range from 125% of average in the St. Joe basin to 165% in the Priest and Rathdrum basins. Streamflow forecasts also increased and now call for 115-140% of average. With record high snow levels, residents should be prepared for high streamflow volumes and potentially high peak flows.

PANHANDLE REGION
Streamflow Forecasts - March 1, 1999

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ====== Wetter ======>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
KOOTENAI at Leonia (1,2)	APR-JUL	6552	7582	8050	112	8518	9548	7199
	APR-SEP	7526	8712	9250	112	9788	10974	8275
CLARK FK at Whitehorse Rpds (1,2)	APR-JUN	9111	10792	11555	115	12318	13999	10050
	APR-JUL	10635	12605	13500	115	14395	16365	11730
	APR-SEP	11747	13915	14900	115	15885	18053	12910
PEND OREILLE Lake Inflow (1,2)	APR-JUN	10298	12294	13200	116	14106	16102	11390
	APR-JUL	12225	14340	15300	116	16260	18375	13150
	APR-SEP	13337	15650	16700	116	17750	20063	14370
PRIEST nr Priest River (1,2)	APR-JUL	703	852	920	113	988	1137	814
	APR-SEP	749	908	980	113	1052	1211	868
COEUR D'ALENE at Enaville	APR-JUL	891	998	1070	139	1142	1249	770
	APR-SEP	937	1046	1120	138	1194	1303	809
ST.JOE at Calder	APR-JUL	1351	1475	1560	133	1645	1769	1169
	APR-SEP	1444	1573	1660	134	1747	1876	1237
SPOKANE near Post Falls (2)	APR-JUL	2998	3344	3580	136	3816	4162	2633
	APR-SEP	3117	3470	3710	136	3950	4303	2730
SPOKANE at Long Lake	APR-JUL	3405	3774	4025	137	4276	4645	2936
	APR-SEP	3697	4080	4340	137	4600	4983	3159

PANHANDLE REGION
Reservoir Storage (1000 AF) - End of February

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
HUNGRY HORSE	3451.0	2281.0	2358.0	2205.0
FLATHEAD LAKE	1791.0	638.6	587.7	881.0
NOXON RAPIDS	335.0	323.9	326.7	298.1
PEND OREILLE	1561.3	918.3	899.1	798.0
COEUR D'ALENE	238.5	163.5	103.5	149.1
PRIEST LAKE	119.3	58.2	50.0	54.6

PANHANDLE REGION
Watershed Snowpack Analysis - March 1, 1999

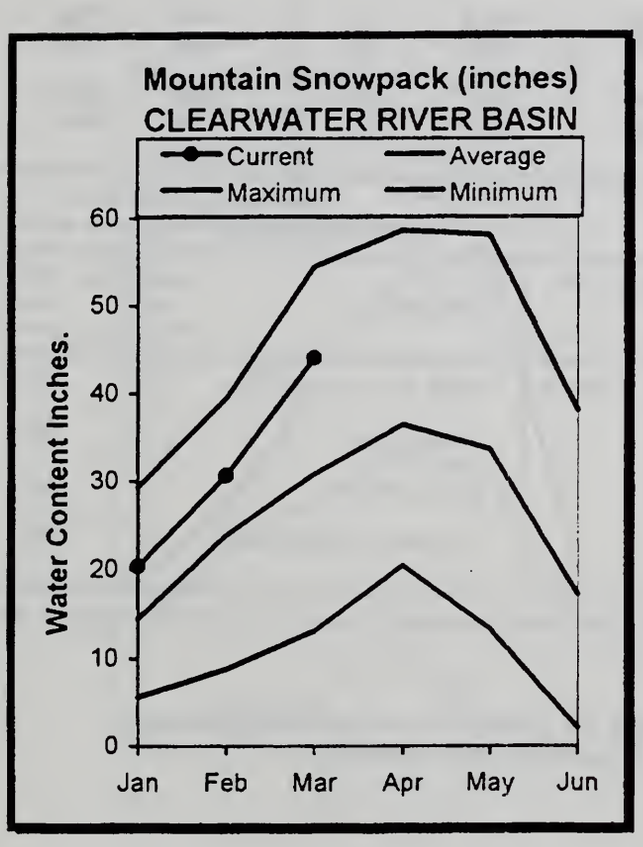
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Kootenai ab Bonners Ferry	31	188	140
Moyie River	12	184	142
Priest River	4	204	178
Pend Oreille River	97	173	128
Rathdrum Creek	4	155	163
Hayden Lake	2	151	146
Coeur d'Alene River	8	173	138
St. Joe River	3	173	131
Spokane River	16	169	140
Palouse River	2	175	133

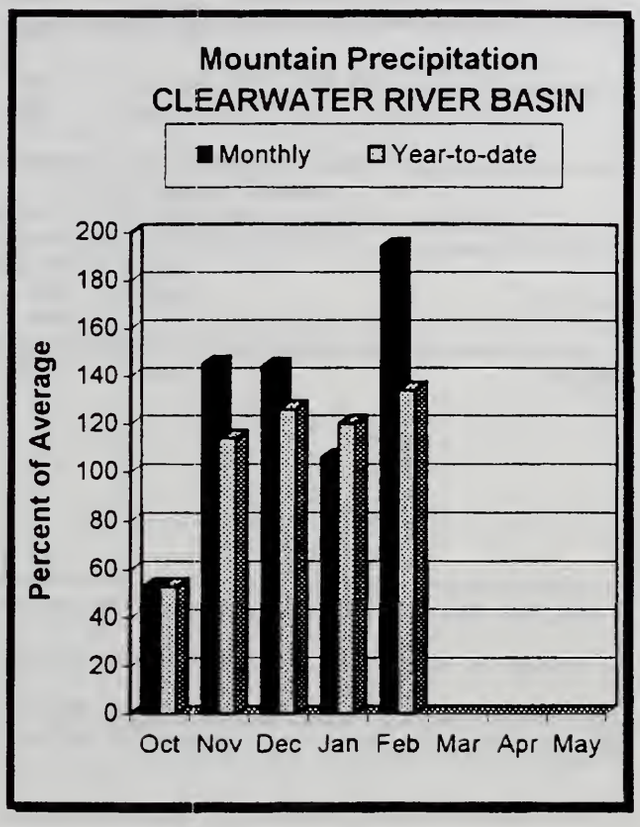
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

CLEARWATER RIVER BASIN
MARCH 1, 1999





WATER SUPPLY OUTLOOK

The positive correlation of above normal snowpacks in the Clearwater basin during La Nina type years is holding true again. Of the previous 9 La Nina type years, the April 1 snowpack in the North Fork Clearwater basin has ranged from 106% of average in 1989 to a record high 168% in 1972. The snowpack is currently 143% of the March 1 average. Overall, the snowpack in the Clearwater basin is 140% of average. Nearly all the SNOTEL sites in the Clearwater have exceeded their March 1, 1997, levels. Dworshak Reservoir is 54% of capacity; drafting will continue until reaching minimum pool of 1,452,000 acre-feet, which is 42% of capacity. Streamflow forecasts are for 134% of average for Dworshak Reservoir inflow and 129% for Clearwater River near Spalding. Water users and river runners can expect an extended period of high flows and high peak flows. In other La Nina years, precipitation has ranged from 86-144% of averages, with most years receiving 85-100% of the normal April-June amounts.

CLEARWATER RIVER BASIN
Streamflow Forecasts - March 1, 1999

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
DWORSHAK RESV INFLOW (1,2)	APR-JUL	2997	3412	3600	134	3788	4203	2687
	APR-SEP	3205	3642	3840	134	4038	4475	2858
CLEARWATER at Orofino (1)	APR-JUL	4152	5223	5710	121	6197	7268	4718
	APR-SEP	4366	5496	6010	121	6524	7654	4976
CLEARWATER at Spalding (1,2)	APR-JUL	7417	9070	9820	129	10570	12223	7618
	APR-SEP	7856	9606	10400	129	11194	12944	8052

CLEARWATER RIVER BASIN
Reservoir Storage (1000 AF) - End of February

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
DWORSHAK	3468.0	1875.6	2291.5	2163.0

CLEARWATER RIVER BASIN
Watershed Snowpack Analysis - March 1, 1999

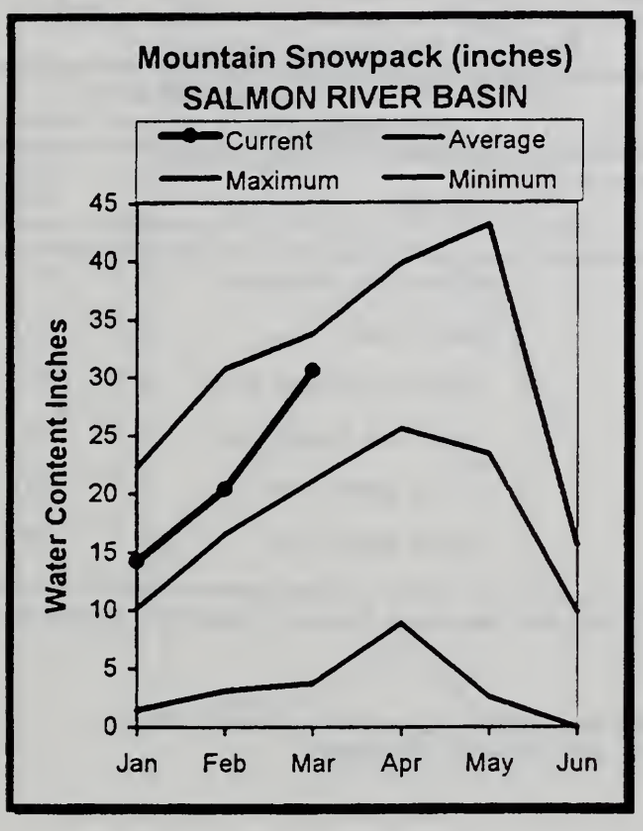
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
North Fork Clearwater	10	199	143
Lochsa River	3	188	139
Selway River	5	160	129
Clearwater Basin Total	18	187	139

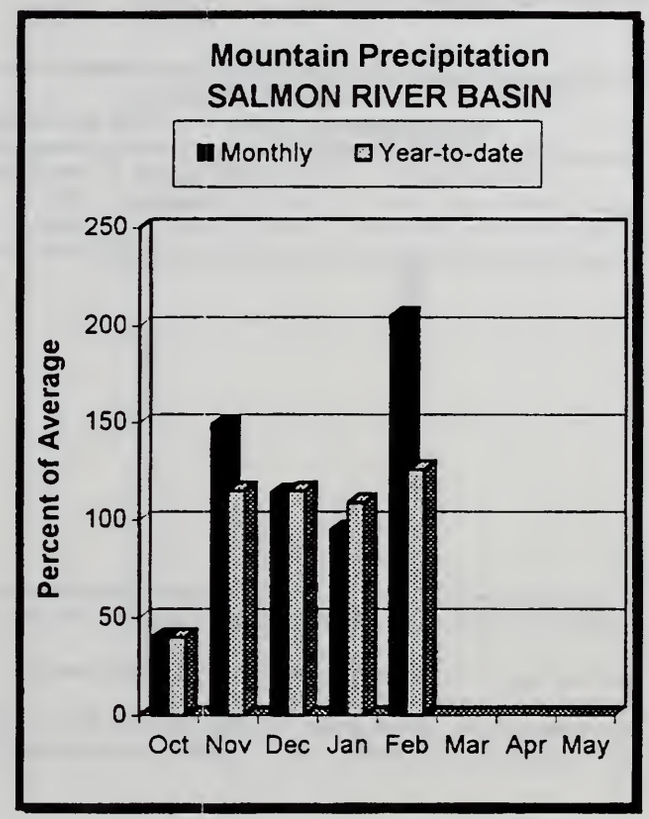
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

SALMON RIVER BASIN
MARCH 1, 1999





WATER SUPPLY OUTLOOK

Mountain precipitation was twice normal in the Salmon basin and increased snow measuring sites in the headwaters of the **Little Salmon and North Fork Payette basins to new record high values for March 1.** The Little Salmon snowpack is 166% of average, highest since the record started in 1961. South Fork Salmon basin snowpack is 148%, while the Middle Fork Salmon snowpack is 138%. Overall, the Salmon basin snowpack is 136% of average, which is slightly less than the 147% of average recorded March 1, 1997. Streamflow forecasts are for 129% of average for the Salmon River above Salmon and 127% for the Salmon River near White Bird. With a snowpack similar to 1997 levels, the potential for high peak flows and long boating season is real.

SALMON RIVER BASIN
Streamflow Forecasts - March 1, 1999

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	50% (Most Probable) (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
SALMON at Salmon (1)	APR-JUL	779	1013	1120	129	1227	1461	869
	APR-SEP	910	1185	1310	129	1435	1710	1019
SALMON at White Bird (1)	APR-JUL	5790	7000	7550	127	8100	9310	5956
	APR-SEP	6420	7761	8370	127	8979	10320	6602

SALMON RIVER BASIN
Reservoir Storage (1000 AF) - End of February

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg

SALMON RIVER BASIN
Watershed Snowpack Analysis - March 1, 1999

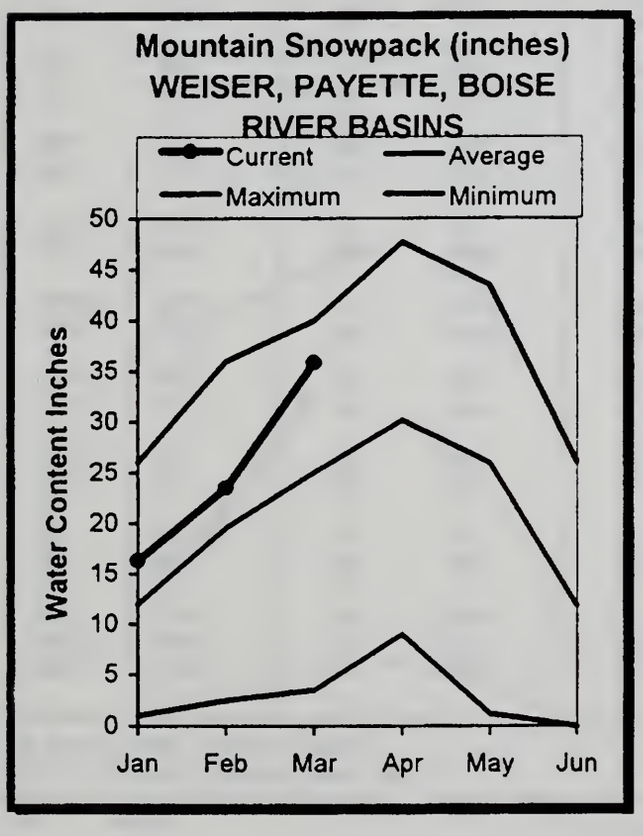
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Salmon River ab Salmon	10	156	136
Lemhi River	9	133	121
Middle Fork Salmon River	3	170	138
South Fork Salmon River	3	171	148
Little Salmon River	4	178	166
Salmon Basin Total	29	159	140

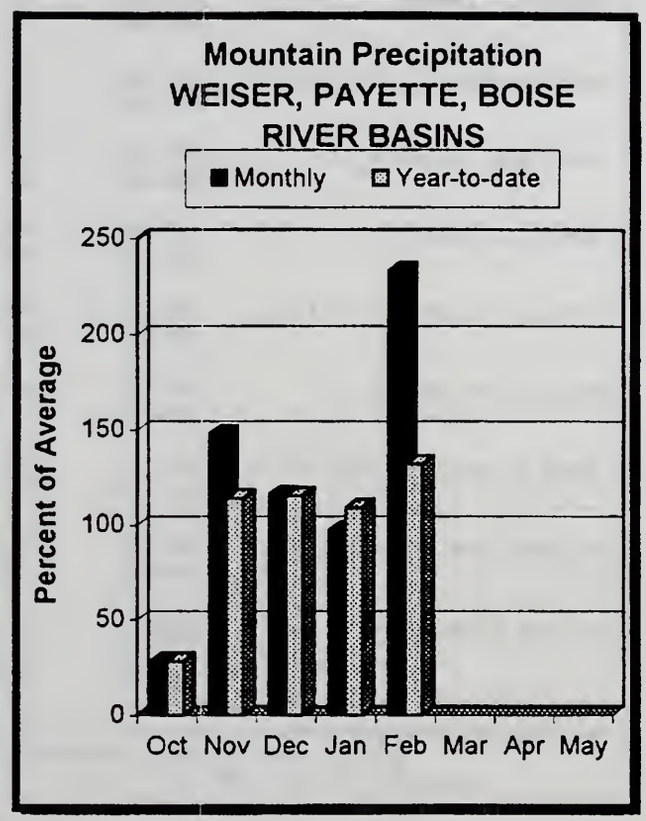
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

WEISER, PAYETTE, BOISE RIVER BASINS MARCH 1, 1999





WATER SUPPLY OUTLOOK

February precipitation in the west-central basins was the highest in the state at 233% of average. Many individual snow measuring stations in the headwaters of the Weiser, Mann and North Fork Payette basins are at record high March 1 levels. **Basin-wide snowpacks in the Weiser and North Fork Payette basins are record high,** 172% of average and 160% respectively, since records started in 1961! Snowpacks in the Boise basin are 144% of average and compare similarly to the 148% on March 1, 1997. Prairie SNOTEL site, a low elevation site at 4,800 feet in the South Fork Boise basin, has 9.7 inches of snow, the most since daily records started 17 years ago. **Snow measuring stations (Prairie, Bogus Basins, Deadman Gulch and Placer Creek) in the 4,700-6,200 feet elevation zone are at or above record high levels in the Weiser, Payette, and Boise basins.** Brundage Reservoir, just north of McCall, has 42.6 inches of snow water, the most ever measured on March 1. The *all time maximum amount measured* at Brundage Reservoir was on May 1, 1974, 45.3 inches. The Weiser River is forecast at 165% of average, near record high; the North Fork Payette River is forecast at and 152%. The Boise River is forecast at 127% of average. Reservoirs are being drafted to make room for this year's high runoff volumes. Residents in low lying areas should be prepared for an extended period of high flows and possible high peak flows. A dry spring would help; April-June precipitation in other La Nina years has ranged from 50-150% of average in the Boise basin.

WEISER, PAYETTE, BOISE RIVER BASINS
Streamflow Forecasts - March 1, 1999

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
WEISER nr Weiser (1)	APR-JUL	423	569	635	165	701	847	386
	APR-SEP	458	614	685	165	756	912	415
SF PAYETTE at Lowman	APR-JUL	454	499	530	123	561	606	432
	APR-SEP	514	565	600	123	635	686	488
DEADWOOD RESERVOIR Inflow (1,2)	APR-JUL	144	164	174	129	184	204	135
	APR-SEP	151	173	183	128	193	215	143
NF PAYETTE nr Cascade (1,2)	APR-JUL	612	710	755	152	800	898	496
	APR-SEP	661	767	815	153	863	969	533
NF PAYETTE nr Banks (2)	APR-JUL	829	922	985	152	1048	1141	648
	APR-SEP	883	982	1050	152	1118	1217	690
PAYETTE nr Horseshoe Bend (1,2)	APR-JUL	1988	2268	2395	148	2522	2802	1618
	APR-SEP	2166	2471	2610	149	2749	3054	1755
BOISE near Twin Springs (1)	APR-JUL	649	749	795	126	841	941	631
	APR-SEP	706	815	865	126	915	1024	686
SF BOISE at Anderson Ranch Dam (1,2)	APR-JUL	536	639	685	126	731	834	544
	APR-SEP	570	679	728	125	777	886	582
MORES CREEK near Arrowrock Dam	APR-JUL	140	163	178	138	193	216	129
	APR-SEP	145	168	184	137	200	223	134
BOISE near Boise (1,2)	APR-JUN	1313	1503	1590	126	1677	1867	1264
	APR-JUL	1434	1686	1800	127	1914	2166	1421
	APR-SEP	1548	1814	1935	126	2056	2322	1535

WEISER, PAYETTE, BOISE RIVER BASINS
Reservoir Storage (1000 AF) - End of February

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
MANN CREEK	11.1	7.9	5.1	6.0
CASCADE	703.2	511.8	567.3	402.6
DEADWOOD	161.9	119.3	130.5	83.9
ANDERSON RANCH	464.2	363.4	373.7	275.5
ARROWROCK	286.6	231.6	224.0	228.4
LUCKY PEAK	293.2	125.9	159.1	119.7
LAKE LOWELL (DEER FLAT)	177.1	116.4	114.1	127.3

WEISER, PAYETTE, BOISE RIVER BASINS
Watershed Snowpack Analysis - March 1, 1999

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Mann Creek	2	144	173
Weiser River	5	161	172
North Fork Payette	8	164	160
South Fork Payette	5	155	136
Payette Basin Total	14	158	151
Middle & North Fork Boise	6	146	134
South Fork Boise River	9	140	138
Mores Creek	4	139	154
Boise Basin Total	15	141	142
Canyon Creek	2	127	164

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
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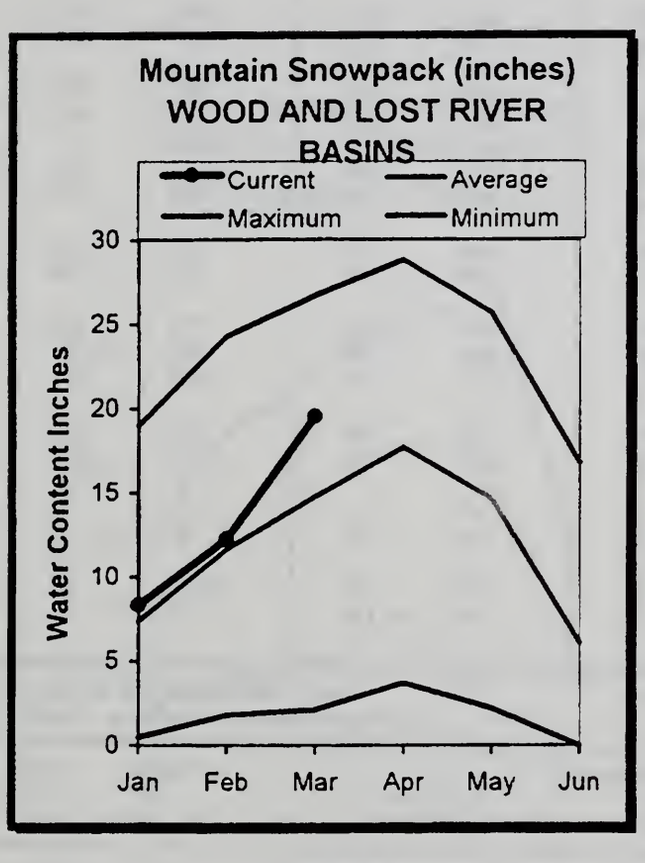
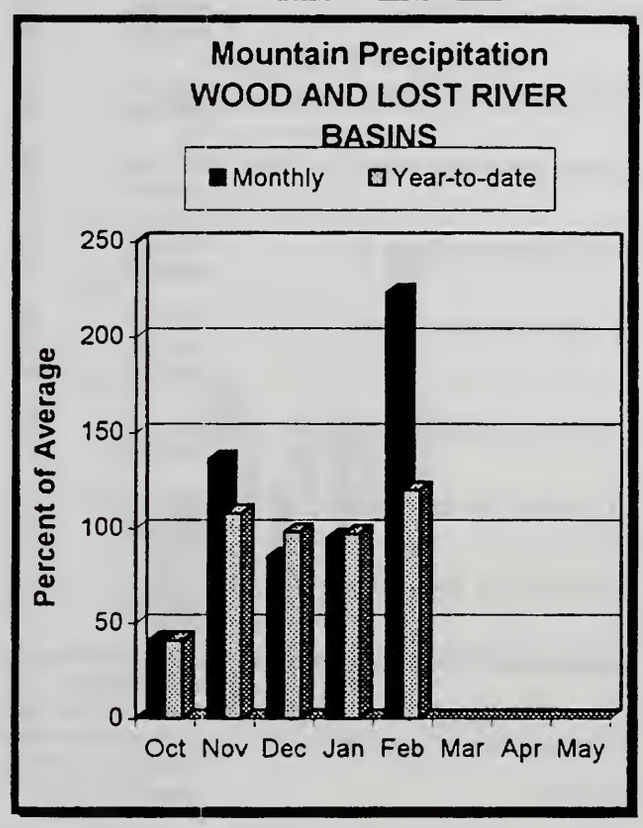
WOOD and LOST RIVER BASINS
MARCH 1, 1999





WATER SUPPLY OUTLOOK

February precipitation was 222% of average and increased snowpacks levels to high percentages, but not as high as in 1997. The snowpack in the Big Wood basin is 137% of average and was 158% on March 1, 1997. The Big Lost basin has a snowpack of 142% of average. Copper Basin snow course in the Big Lost basin, elevation 7,640 feet, is 167% of average, same as in 1997. Soldier RS, located north of Fairfield at 5,740 feet in elevation, is 154% of average, also same as 1997. These sites represent the a broad elevation zone in their basins that produce a lot of the mid-elevation snowmelt water runoff. Mackay Reservoir is 80% full and releasing some water. Magic Reservoir is 70% full. Little Wood Reservoir is being drafted and have plenty of runoff to re-fill it. Forecasts increased significantly from last month and now range 118-150% of average for these central Idaho basins. Reservoir operators may consider basing their management operations on the 30% and 10% Exceedance Forecasts as a result of the past years good moisture recharging the soil profile and keeping baseflows higher after the snowmelt season.

WOOD AND LOST RIVER BASINS
Streamflow Forecasts - March 1, 1999

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
BIG WOOD at Hailey (1)	APR-JUL	251	314	345	135	377	454	255
	APR-SEP	287	356	390	135	425	509	289
BIG WOOD near Bellevue	APR-JUL	185	229	262	143	297	353	183
	APR-SEP	199	244	278	141	314	371	197
CAMAS CREEK near Blaine	APR-JUL	108	133	152	149	172	203	102
	APR-SEP	110	135	154	150	174	205	103
BIG WOOD below Magic Dam (2)	APR-JUL	359	408	442	150	476	525	295
	APR-SEP	371	424	460	148	496	549	310
LITTLE WOOD near Carey (2)	MAR-JUL	118	138	152	152	165	186	100
	MAR-SEP	126	148	162	150	176	198	108
BIG LOST at Howell Ranch	APR-JUN	138	160	175	124	190	212	141
	APR-JUL	168	201	224	124	247	280	181
	APR-SEP	192	230	255	124	280	318	206
BIG LOST below Mackay Reservoir (2)	APR-JUL	139	170	192	126	214	245	152
	APR-SEP	170	206	230	125	254	290	184
LITTLE LOST blw Wet Creek	APR-JUL	29	33	36	117	40	44	31
	APR-SEP	36	42	46	118	50	56	39
LITTLE LOST nr Howe (Disc)	APR-JUL	33	37	39	118	41	45	33
	APR-SEP	42	47	50	116	53	58	43

WOOD AND LOST RIVER BASINS
Reservoir Storage (1000 AF) - End of February

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
MAGIC	191.5	134.8	162.7	96.0
LITTLE WOOD	30.0	21.2	19.7	17.7
MACKAY	44.4	35.5	34.7	31.9

WOOD AND LOST RIVER BASINS
Watershed Snowpack Analysis - March 1, 1999

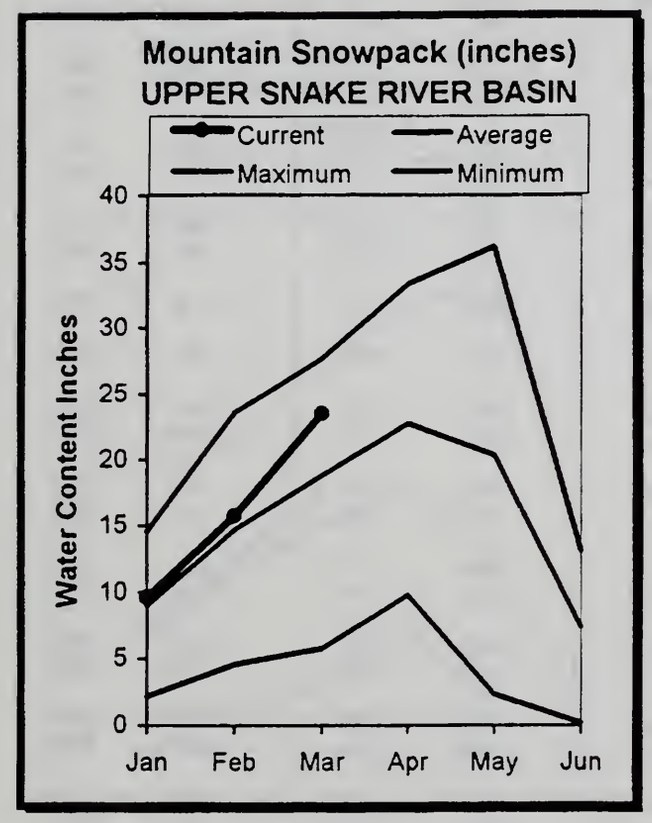
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Big Wood ab Magic	8	144	128
Camas Creek	5	142	159
Big Wood Basin Total	13	143	137
Little Wood River	3	144	138
Fish Creek	3	160	147
Big Lost River	6	160	141
Little Lost River	4	157	137
Birch-Medicine Lodge Cree	4	141	137

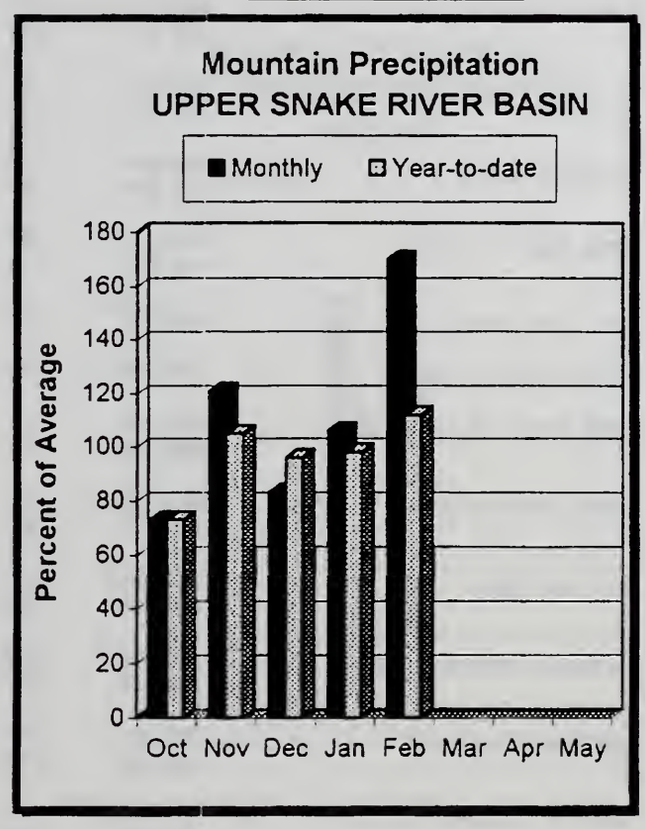
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

UPPER SNAKE RIVER BASIN
MARCH 1, 1999





WATER SUPPLY OUTLOOK

Precipitation has been above normal every month since November, but not nearly as high as in 1997. February precipitation was 170% of average and is 112% for the water year to date. In 1997, the water year to date precipitation (October 1- February 28) was 142% of average. The highest snowpacks are in the Henrys Fork-Falls River basin at 132% of average. The lowest snowpacks are around 115% of average in the Greys, Salt, Hoback, Blackfoot and Portneuf basins. On March 1, 1997, the snowpack ranged from 140-170% of average in these basins. Combined storage in the 8 major reservoirs is near average and 76% of capacity. Streamflow forecasts range from 115-135% of average in these basins. Streamflows will be above normal levels, but at more manageable flows than in 1997.

UPPER SNAKE RIVER BASIN
Streamflow Forecasts - March 1, 1999

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
HENRYS FORK near Ashton (2)	APR-JUL	539	589	623	115	657	707	544
	APR-SEP	732	790	830	114	870	928	730
HENRYS FORK near Rexburg (2)	APR-JUL	1145	1306	1415	115	1524	1685	1228
	APR-SEP	1481	1662	1785	115	1908	2089	1551
FALLS near Squirrel (1,2)	APR-JUL	337	391	415	114	439	493	364
	APR-SEP	412	468	493	114	518	574	432
TETON near Driggs	APR-JUL	128	153	171	113	189	214	152
	APR-SEP	173	204	225	113	246	277	199
TETON near St. Anthony	APR-JUL	333	390	429	114	468	525	377
	APR-SEP	411	476	520	114	564	629	457
SNAKE near Moran (1,2)	APR-SEP	901	1024	1080	124	1136	1259	869
PACIFIC CREEK at Moran	APR-SEP	196	217	231	139	245	266	166
SNAKE above Palisades (2)	APR-JUL	2617	2806	2935	127	3064	3253	2311
	APR-SEP	3029	3244	3390	127	3536	3751	2671
GREYS above Palisades	APR-JUL	317	356	383	115	410	449	333
	APR-SEP	371	415	445	115	475	519	388
SALT near Etna	APR-JUL	274	328	365	114	402	456	319
	APR-SEP	343	407	450	113	493	557	399
PALISADES RESERVOIR INFLOW (1,2)	APR-JUL	3588	4029	4230	131	4431	4872	3226
	APR-SEP	3947	4437	4660	124	4883	5373	3763
SNAKE near Heise (2)	APR-JUL	3769	4094	4315	125	4536	4861	3451
	APR-SEP	4394	4761	5010	124	5259	5626	4049
SNAKE nr Blackfoot (1,2)	APR-JUL	4452	5255	5620	127	5985	6788	4444
	APR-SEP	5637	6513	6910	126	7307	8183	5482
PORTNEUF at Topaz	MAR-JUL	77	87	94	109	100	110	86
	MAR-SEP	95	107	115	108	123	135	107
AMERICAN FALLS RESV INFLOW (1,2)	APR-JUL	2842	3714	4110	134	4506	5378	3066
	APR-SEP	3007	4006	4460	135	4914	5913	3303

UPPER SNAKE RIVER BASIN
Reservoir Storage (1000 AF) - End of February

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
HENRYS LAKE	90.4	88.7	87.8	79.5
ISLAND PARK	135.2	112.7	112.5	109.3
GRASSY LAKE	15.2	13.1	7.8	11.0
JACKSON LAKE	847.0	623.4	649.6	481.0
PALISADES	1400.0	1039.3	1204.5	1063.1
RIRIE	80.5	45.4	45.2	36.7
BLACKFOOT	348.7	284.2	281.6	239.7
AMERICAN FALLS	1672.6	1261.9	1401.8	1277.0

UPPER SNAKE RIVER BASIN
Watershed Snowpack Analysis - March 1, 1999

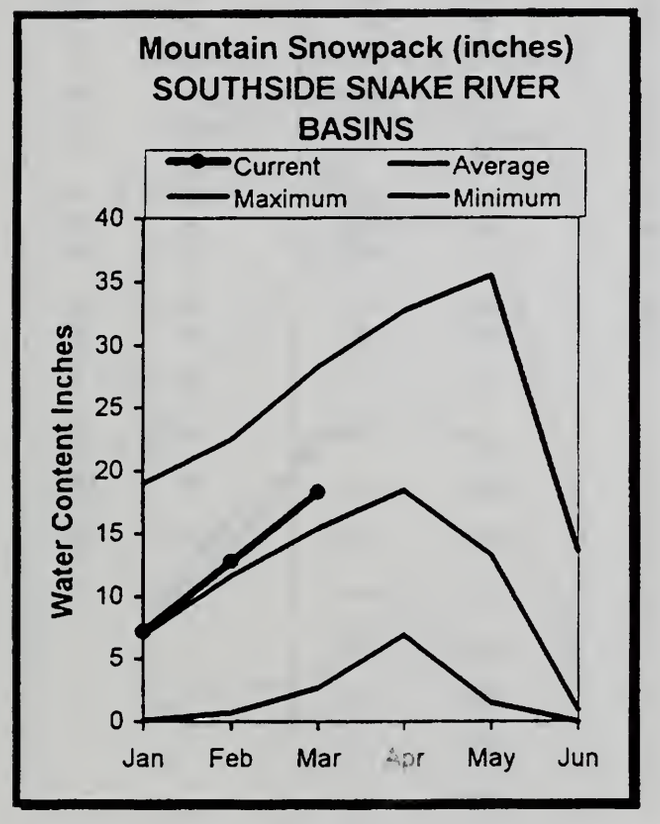
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Camas-Beaver Creeks	4	135	124
Henrys Fork-Falls River	12	151	132
Teton River	8	124	119
Snake above Jackson Lake	12	141	129
Gros Ventre River	3	121	120
Hoback River	7	129	113
Greys River	4	129	112
Salt River	5	119	116
Snake above Palisades	29	134	124
Willow Creek	7	111	128
Blackfoot River	5	112	114
Portneuf River	6	94	114
Snake abv American Falls	45	124	122

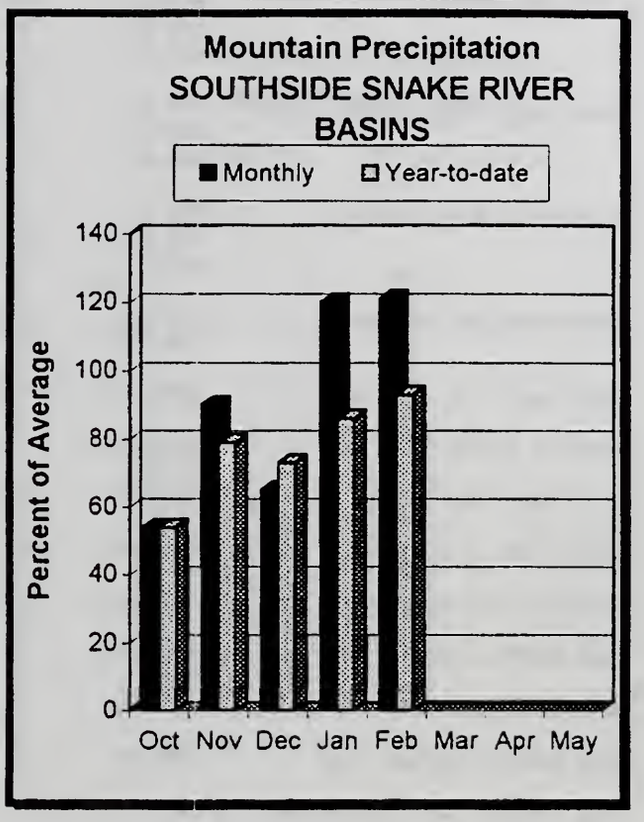
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table. The average is computed for the 1961-1990 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.

(2) - The value is natural flow - actual flow may be affected by upstream water management.

SOUTHSIDE SNAKE RIVER BASINS MARCH 1, 1999





WATER SUPPLY OUTLOOK

February precipitation was 121% of average and is 93% of average for the water year. SNOTEL sites in northern Nevada were the only stations in the entire Snake River basin to receive below normal February precipitation amounts. Snowpacks are near normal in the Bruneau and Salmon Falls basins and around 115% of normal in the Oakley and Raft river basins. Cold temperatures and little rain in the Owhyee basin has kept the snow light and snow depth levels deep. Aerial markers indicate the snow depth levels are deep, but density of the snow varies in the basin and is a critical component to accurately estimate snow water content amounts. Overall, the Owyhee basin snowpack is 170% of average. Oakley Reservoir is 58% of full and is being watched closely to see if additional releases are needed. Salmon Falls Reservoir is 44% of capacity and still has plenty of storage available. Owhyee and Wildhorse reservoirs are about 77% full; releases may be need to maintain storage space. Forecasts increased from last month and call for near normal runoff in these basins, except for Owyhee Reservoir inflow which is forecast at 177% of average. The soil moisture profiles have been recharged and may have a positive effect on keeping baseflows higher in the summer after the snow melt season. High streamflow peaks are possible on the Owhyee River if the snow melts suddenly.

SOUTHSIDE SNAKE RIVER BASINS
Streamflow Forecasts - March 1, 1999

Forecast Point	Forecast Period	<<=== Drier ==== Future Conditions ==== Wetter ===>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	50% (Most Probable) (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
OAKLEY RESV INFLOW (2)	MAR-JUL	22	29	33	100	38	46	33
	MAR-SEP	24	30	35	97	40	48	36
OAKLEY RESV STORAGE	MAR-31	49	50	51	153	51	53	33
	APR-30	53	55	57	149	58	61	38
	MAY-31	51	56	59	144	61	66	41
SALMON FALLS CREEK nr San Jacinto	MAR-JUN	50	63	73	85	84	101	86
	MAR-JUL	52	66	77	84	89	108	91
	MAR-SEP	56	71	82	85	94	114	96
SALMON FALLS RESV STORAGE	MAR-31	83	88	91	142	94	98	64
	APR-30	100	106	110	133	114	120	83
	MAY-31	95	105	111	119	118	127	93
BRUNEAU near Hot Springs	MAR-JUL	134	174	205	87	238	291	235
	MAR-SEP	137	179	210	85	244	299	246
OWYHEE near Gold Creek (2)	MAR-JUL	15.3	22	26	84	32	41	31
OWYHEE nr Owyhee (2)	APR-JUL	42	67	83	97	100	124	86
OWYHEE near Rome	MAR-JUL	685	804	890	163	981	1122	545
OWYHEE RESV INFLOW (2)	MAR-SEP	834	960	1050	177	1145	1291	595
SUCCOR CK nr Jordan Valley	MAR-JUL	14.4	20	24	169	28	34	14.3
SNAKE RIVER at King Hill (1,2)	APR-JUL			3610	125			2896
SNAKE RIVER near Murphy (1,2)	APR-JUL			3700	124			2980
SNAKE RIVER at Weiser (1,2)	APR-JUL			7920	145			5465
SNAKE RIVER at Hells Canyon Dam (1,2	APR-JUL			8750	143			6129
SNAKE blw Lower Granite Dam (1,2)	APR-JUL	20930	25929	28200	130	30471	35470	21650

SOUTHSIDE SNAKE RIVER BASINS
Reservoir Storage (1000 AF) - End of February

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
OAKLEY	77.4	45.1	43.6	28.7
SALMON FALLS	182.6	80.7	76.1	54.7
WILDHORSE RESERVOIR	71.5	55.6	55.5	33.0
OWYHEE	715.0	551.3	497.7	512.0
BROWNLEE	1419.3	996.6	1081.3	996.0

SOUTHSIDE SNAKE RIVER BASINS
Watershed Snowpack Analysis - March 1, 1999

Watershed	Number of Data Sites	This Year as % of Last Yr	This Year as % of Average
Raft River	3	84	112
Goose-Trapper Creeks	4	103	117
Salmon Falls Creek	7	106	103
Bruneau River	8	99	103
Owyhee Basin Total	20	142	170

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

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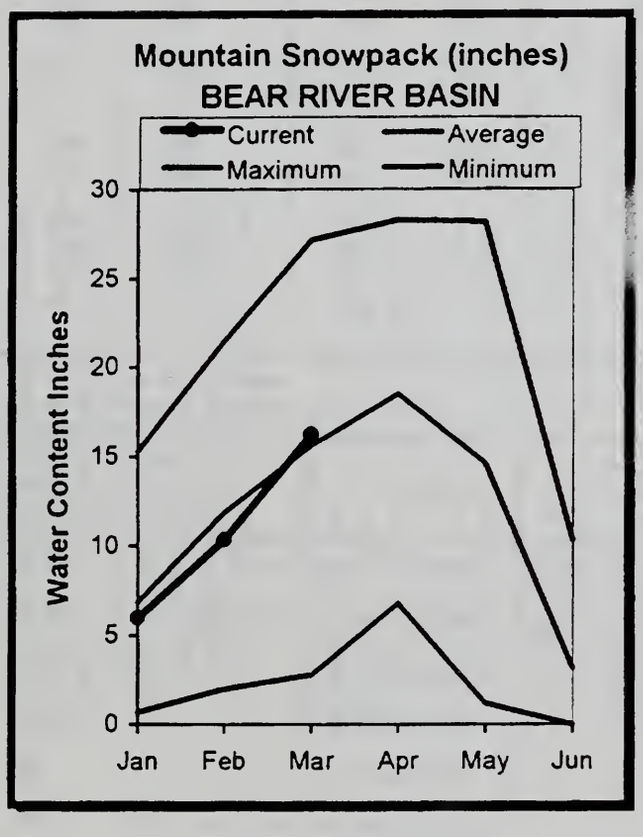
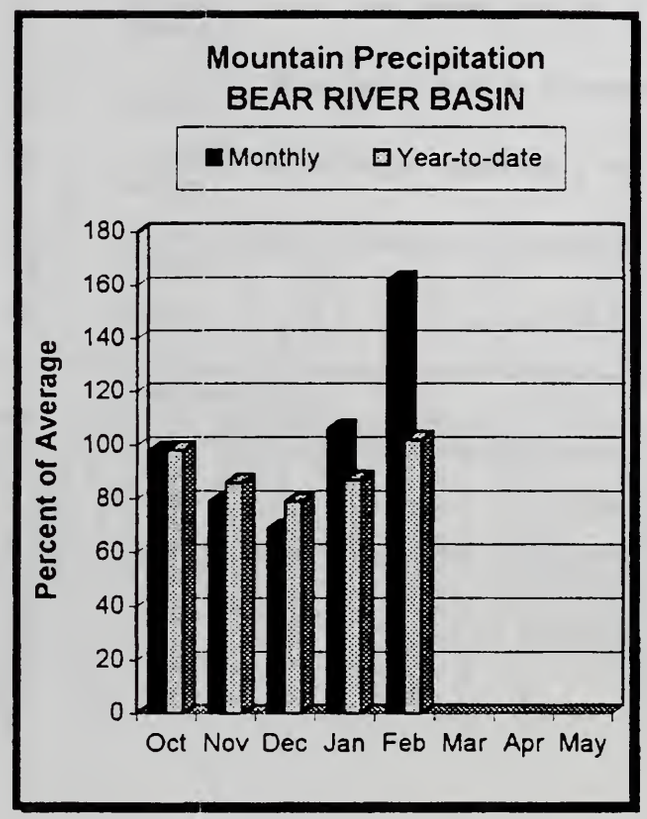
BEAR RIVER BASIN
MARCH 1, 1999





WATER SUPPLY OUTLOOK

Precipitation was 162% of average in the Bear River basin and helped improve the snowpack levels in the southeastern corner of Idaho. Snowpacks increased about 20 percentage points from last month and are now 105-110% of average. Montpelier Creek Reservoir is 63% full. Bear Lake is 79% full and drafting slightly to ensure enough flood control space is maintained. Streamflow forecasts range from 80-100% of average. Water supplies will be adequate for users in this area.

BEAR RIVER BASIN
Streamflow Forecasts - March 1, 1999

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	50% (Most Probable) (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
BEAR R nr Randolph, UT	APR-JUL	25	66	94	80	122	163	118
	APR-SEP	22	69	100	79	131	178	127
SMITHS FK nr Border, WY	APR-JUL	71	88	102	100	118	146	102
	APR-SEP	84	103	118	100	135	165	118
THOMAS FK nr WY-ID State Line (Disc.	APR-JUL	17.2	24	30	91	38	52	33
	APR-SEP	19.3	27	33	92	41	56	36
BEAR R blw Stewart Dam nr Montpelier	APR-JUL	126	188	230	80	272	334	288
	APR-SEP	143	213	260	80	307	377	327
MONTPELIER CK nr Montpelier (Disc)(2	APR-JUL	7.8	9.9	11.6	95	13.6	17.2	12.2
	APR-SEP	9.4	11.6	13.5	95	15.7	19.4	14.2
CUB R nr Preston	APR-JUL	36	43	47	100	52	58	47

BEAR RIVER BASIN
Reservoir Storage (1000 AF) - End of February

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
BEAR LAKE	1421.0	1123.0	1139.9	985.0
MONTPELIER CREEK	4.0	2.5	2.7	1.6

BEAR RIVER BASIN
Watershed Snowpack Analysis - March 1, 1999

Watershed	Number of Data Sites	This Year as % of Last Yr	This Year as % of Average
Smiths & Thomas Forks	3	116	109
Bear River ab WY-ID line	11	113	106
Montpelier Creek	2	119	110
Mink Creek	4	93	107
Cub River	3	89	110
Bear River ab ID-UT line	22	102	106
Malad River	3	83	106

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

Streamflow Adjustment List For All Forecasts Published In Idaho Basin Outlook Report Streamflow forecasts are projections of runoff volumes that would have occurred naturally without influences from upstream reservoirs or diversions. These values are referred to as natural or adjusted flows. To make these adjustments, changes in reservoir storage, diversions, and inter-basin transfers are added or subtracted from the observed (actual) streamflow volumes. The following list documents the adjustments made to each forecast point in this report. (Revised October 1998)

Panhandle River Basins

KOOTENAI R AT LEONIA, ID
+ LAKE KOOCANUSA (STORAGE CHANGE)
CLARK FORK AT WHITEHORSE RAPIDS, ID
+ HUNGRY HORSE (STORAGE CHANGE)
+ FLATHEAD LAKE (STORAGE CHANGE)
+ NOXON RAPIDS RESV (STORAGE CHANGE)
PEND OREILLE LAKE INFLOW, ID
+ PEND OREILLE R AT NEWPORT, WA
+ HUNGRY HORSE (STORAGE CHANGE)
+ FLATHEAD LAKE (STORAGE CHANGE)
+ NOXON RAPIDS (STORAGE CHANGE
+ PEND OREILLE LAKE (STORAGE CHANGE)
PRIEST R NR PRIEST R, ID
+ PRIEST LAKE (STORAGE CHANGE)
COEUR D'ALENE R AT ENAVILLE, ID - No Corrections
ST. JOE R AT CALDER, ID - No Corrections
SPOKANE R NR POST FALLS, ID
+ COEUR D'ALENE LAKE (STORAGE CHANGE)
SPOKANE R AT LONG LAKE, WA
+ COEUR D'ALENE LAKE (STORAGE CHANGE)
+ LONG LAKE, WA (STORAGE CHANGE)

Clearwater River Basin

DWORSHAK RESERVOIR INFLOW, ID
+ DWORSHAK RESV (STORAGE CHANGE)
- CLEARWATER R AT OROFINO, ID
+ CLEARWATER R NR PECK, ID
CLEARWATER R AT OROFINO, ID - No Corrections
CLEARWATER R AT SPALDING, ID
+ DWORSHAK RESV (STORAGE CHANGE)

Salmon River Basin

SALMON R AT SALMON, ID - No Corrections
SALMON R AT WHITE BIRD, ID - No Corrections

Weiser, Payette, Boise River Basins

WEISER R NR WEISER, ID - No Corrections
SF PAYETTE R AT LOWMAN, ID - No Corrections
DEADWOOD RESERVOIR INFLOW, ID
+ DEADWOOD R BLW DEADWOOD RESV NR LOWMAN
+ DEADWOOD RESV (STORAGE CHANGE)
NF PAYETTE R AT CASCADE, ID
+ CASCADE RESV (STORAGE CHANGE)
NF PAYETTE R NR BANKS, ID
+ CASCADE RESV (STORAGE CHANGE)
PAYETTE R NR HORSESHOE BEND, ID
+ DEADWOOD RESV (STORAGE CHANGE)
+ CASCADE RESV (STORAGE CHANGE)
BOISE R NR TWIN SPRINGS, ID - No Corrections
SF BOISE R AT ANDERSON RANCH DAM, ID
+ ANDERSON RANCH RESV (STORAGE CHANGE)
BOISE R NR BOISE, ID
+ ANDERSON RANCH RESV (STORAGE CHANGE)
+ ARROWROCK RESV (STORAGE CHANGE)
+ LUCKY PEAK RESV (STORAGE CHANGE)

Wood and Lost River Basins

BIG WOOD R AT HAILEY, ID - No Corrections
BIG WOOD R NR BELLEVUE, ID - No Corrections
BIG WOOD R BLW MAGIC DAM NR RICHFIELD, ID
+ MAGIC RESV (STORAGE CHANGE)
LITTLE WOOD R NR CAREY, ID
+ LITTLE WOOD RESV (STORAGE CHANGE)
BIG LOST R AT HOWELL RANCH NR CHILLY, ID - No Corrections
BIG LOST R BLW MACKAY RESV NR MACKAY, ID
+ MACKAY RESV (STORAGE CHANGE)
LITTLE LOST R BLW WET CK NR HOWE, ID - No Corrections
LITTLE LOST R NR HOWE, ID - No Corrections (Disc)

Upper Snake River Basin

HENRYS FORK NR ASHTON, ID
+ HENRYS LAKE (STORAGE CHANGE)
+ ISLAND PARK RESV (STORAGE CHANGE)
HENRYS FORK NR REXBURG, ID
+ HENRYS LAKE (STORAGE CHANGE)
+ ISLAND PARK RESV (STORAGE CHANGE)
+ DIV FM HENRYS FK BTW ASHTON & ST. ANTHONY, ID
+ DIV FM HENRYS FK BTW ST. ANTHONY & REXBURG, ID
+ GRASSY LAKE (STORAGE CHANGE)
FALLS R ABV YELLOWSTONE CANAL NR SQUIRREL, ID
+ GRASSY LAKE (STORAGE CHANGE)
TETON R ABV SO LEIGH CK NR DRIGGS, ID - No Corrections
TETON R NR ST. ANTHONY, ID
- CROSS CUT CANAL
+ SUM OF DIVERSIONS ABV GAGE
SNAKE R NR MORAN, WY
+ JACKSON LAKE (STORAGE CHANGE)
PALISADES RESERVOIR INFLOW, ID
+ SNAKE R NR IRWIN, ID
+ JACKSON LAKE (STORAGE CHANGE)
+ PALISADES RESV (STORAGE CHANGE)
SNAKE R NR HEISE, ID
+ JACKSON LAKE (STORAGE CHANGE)
+ PALISADES RESV (STORAGE CHANGE)

SNAKE R NR BLACKFOOT, ID
+ PALISADES RESV (STORAGE CHANGE)
+ JACKSON LAKE (STORAGE CHANGE)
+ DIV FM SNAKE R BTW HEISE AND SHELLY GAGES
+ DIV FM SNAKE R BTW SHELLY AND BLACKFT, ID
PORTNEUF R AT TOPAZ, ID - No Corrections
AMERICAN FALLS RESERVOIR INFLOW, ID
+ ALL CORRECT MADE FOR HENRYS FK NR REXBURG, ID
+ JACKSON LAKE (STORAGE CHANGE)
+ PALISADES RESV (STORAGE CHANGE)
+ DIV FM SNAKE R BTW HEISE AND SHELLY GAGES
+ DIV FM SNAKE R BTW SHELLY AND BLACKFT GAGES

Southside Snake River Basins

OAKLEY RESERVOIR INFLOW, ID
+ GOOSE CK ABV TRAPPER CK NR OAKLEY, ID
+ TRAPPER CK NR OAKLEY, ID
SALMON FALLS CK NR SAN JACINTO, NV - No Corrections
BRUNEAU R NR HOT SPRINGS, ID - No Corrections
OWYHEE R NR GOLD CK, NV
+ WILDHORSE RESV (STORAGE CHANGE)
OWYHEE R NR OWYHEE, NV
+ WILDHORSE RESV (STORAGE CHANGE)
OWYHEE R NR ROME, OR
+ WILDHORSE RESV (STORAGE CHANGE)
+ JORDAN VALLEY RESV (STORAGE CHANGE)
OWYHEE RESERVOIR INFLOW, OR
+ OWYHEE R BLW OWYHEE DAM, OR
+ OWYHEE RESV (STORAGE CHANGE)
+ DIV TO NORTH AND SOUTH CANALS
SUCCOR CK NR JORDAN VALLEY, OR - No Corrections
SNAKE R - KING HILL, ID - No Corrections
SNAKE R NR MURPHY, ID - No Corrections
SNAKE R AT WEISER, ID - No Corrections
SNAKE R AT HELLS CANYON DAM, ID
+ BROWNLEE RESV (STORAGE CHANGE)

Bear River Basin

BEAR R NR RANDOLPH, UT
+ SULPHUR CK RESV (STORAGE CHANGE)
+ CHAPMAN CANAL DIVERSION
+ WOODRUFF NARROWS RESV (STORAGE CHANGE)
SMITHS FORK NR BORDER, WY - No Corrections
THOMAS FORK NR WY-ID STATELINE - No Corrections (Disc)
BEAR R BLW STEWART DAM, ID
+ SULPHUR CK RESV (STORAGE CHANGE)
+ CHAPMAN CANAL DIVERSION
+ WOODRUFF NARROWS RESV (STORAGE CHANGE)
+ DINGLE INLET CANAL
+ RAINBOW INLET CANAL
MONTPELIER CK AT IRR WEIR NR MONTPELIER, ID (Disc)
+ MONTPELIER CK RESV (STORAGE CHANGE)
CUB R NR PRESTON, ID - No Corrections

RESERVOIR CAPACITY DEFINITIONS (Units in 1000 acre-feet, KAF)

Different agencies use various definitions when reporting reservoir capacity and contents. Reservoir storage terms include dead, inactive, active, and surcharge storage. The table below lists these volumes for each reservoir in this report, and defines the storage volumes that NRCS uses when reporting capacity and current reservoir storage. In most cases, NRCS reports usable storage, which includes active and inactive storage.

BASIN/ RESERVOIR	DEAD STORAGE	INACTIVE STORAGE	ACTIVE STORAGE	SURCHARGE STORAGE	NRCS CAPACITY	NRCS CAPACITY INCLUDES
PANHANDLE REGION						
HUNGRY HORSE	39.73	--	3451.00	--	3451.0	ACTIVE
FLATHEAD LAKE	Unknown	--	1791.00	--	1971.0	ACTIVE
NOXON RAPIDS	Unknown	--	335.00	--	335.0	ACTIVE
PEND OREILLE	406.20	112.40	1042.70	--	1561.3	DEAD+INACTIVE+ACTIVE
COEUR D'ALENE	--	13.50	225.00	--	238.5	INACTIVE+ACTIVE
PRIEST LAKE	20.00	28.00	71.30	--	119.3	DEAD+INACTIVE+ACTIVE
CLEARWATER BASIN						
DWORSHAK	--	1452.00	2016.00	--	3468.0	INACTIVE+ACTIVE
WEISER/BOISE/PAYETTE BASINS						
MANN CREEK	1.61	0.24	11.10	--	11.1	ACTIVE
CASCADE	--	50.00	653.20	--	703.2	INACTIVE+ACTIVE
DEADWOOD	1.50	--	161.90	--	161.9	ACTIVE
ANDERSON RANCH	29.00	41.00	423.18	--	464.2	INACTIVE+ACTIVE
ARROWROCK	--	--	286.60	--	286.6	ACTIVE
LUCKY PEAK	--	28.80	264.40	13.80	293.2	INACTIVE+ACTIVE
LAKE LOWELL	--	8.00	169.10	--	177.1	INACTIVE+ACTIVE
WOOD/LOST BASINS						
MAGIC	--	--	191.50	--	191.5	ACTIVE
LITTLE WOOD	--	--	30.00	--	30.0	ACTIVE
MACKAY	0.13	--	44.37	--	44.4	ACTIVE
UPPER SNAKE BASIN						
HENRYS LAKE	--	--	90.40	--	90.4	ACTIVE
ISLAND PARK	0.40	--	127.30	7.90	135.2	ACTIVE+SURCHARGE
GRASSY LAKE	--	--	15.18	--	15.2	ACTIVE
JACKSON LAKE	--	--	847.00	--	847.0	ACTIVE
PALISADES	44.10	155.50	1200.00	--	1400.0	DEAD+INACTIVE+ACTIVE
RIRIE	4.00	6.00	80.54	10.00	80.5	ACTIVE
BLACKFOOT	--	--	348.73	--	348.7	ACTIVE
AMERICAN FALLS	--	--	1672.60	--	1672.6	ACTIVE
SOUTHSIDE SNAKE BASINS						
OAKLEY	--	--	74.50	--	77.4	ACTIVE
SALMON FALLS	48.00	--	182.65	--	182.6	ACTIVE
WILDHORSE	--	--	71.50	--	71.5	ACTIVE
OWYHEE	406.83	--	715.00	--	715.0	ACTIVE
BROWNLEE	0.45	444.00	975.30	--	1419.3	INACTIVE+ACTIVE
BEAR RIVER BASIN						
WOODRUFF NARROWS	--	1.50	57.30	--	57.3	ACTIVE
WOODRUFF CREEK	--	4.00	4.00	--	4.0	ACTIVE
BEAR LAKE	--	--	1421.00	--	1421.0	ACTIVE
MONTPELIER CREEK	0.21	--	3.84	--	4.0	DEAD+ACTIVE

Interpreting Streamflow Forecasts

Introduction
Each month, five forecasts are issued for each forecast point and each forecast period. Unless otherwise specified, all streamflovv forecasts are for streamflow volumes that would occur naturally without any upstream influences. Water users need to know what the different forecasts represent if they are to use the information correctly when making operational decisions. The following is an explanation of each of the forecasts.

Most Probable (50 Percent Chance of Exceeding) Forecast. This forecast is the best estimate of streamflow volume that can be produced given current conditions and based on the outcome of similar past situations, There is a 50 percent chance that the streamflow volume will exceed this forecast value. There is a 50 percent chance that the streamflow volume will be less than this forecast value.

The most probable forecast will rarely be exactly right, due to errors resulting from future weather conditions and the forecast equation itself. This does not mean that users should not use the most probable forecast; it means that they need to evaluate existing circumstances and determine the amount of risk they are willing to take by accepting this forecast value.

To Decrease the Chance of Having Too little Water
If users want to make sure there is enough water available for their operations, they might determine that a 50 percent chance of the streamflow volume being lower than the most probable forecast is too much risk to take. To reduce the risk of not having enough water available during the forecast period, users can base their operational decisions on one of the forecasts with a greater chance of being exceeded (or possibly some point in-between). These include:

70 Percent Chance of Exceeding Forecast. There is a 70 percent chance that the streamflow volume will exceed this forecast value.
There is a 30 percent chance the streamflow volume will be less than this forecast value.
90 Percent Chance of Exceeding Forecast. There is a 90 percent chance that the streamflow volume will exceed this forecast value.
There is a 10 percent chance the streamflow volume will be less than this forecast value.

To Decrease the Chance of Having Too much Water
If users want to make sure they don't have too much water, they might determine that a 50 percent chance of the streamflow being higher than the most probable forecast is too much of a risk to take. To reduce the risk of having too much water available during the forecast period, users can base their operational decisions on one of the forecasts with a smaller chance of being exceeded. These include:

30 Percent Chance of Exceeding Forecast. There is a 30 percent chance that the streamflow volume will exceed this forecast value. There is a 70 percent chance the streamflow volume will be less than this forecast value.
10 Percent Chance of Exceeding Forecast. there is a 10 percent chance that the streamflow volume will exceed this forecast value. There is a 90 percent chance the streamflow volume will be less than this forecast value.

Using the forecasts - an example

Using the Most Probable Forecast. Using the example forecasts shown below, users can reasonably expect 36,000 acre-feet to flow past the gaging station on the Mary's River near Death between March I and July 31.

Using the Higher Exceedence Forecasts. If users anticipate a somewhat drier trend in the future (monthly and seasonal weather outlooks are available from the National Weather Service every two weeks), or if they are operating at a level where an unexpected shortage of water could cause problems, they might want to plan on receiving only 20,000 acre-feet (from the 70 percent chance of exceeding forecast). In seven out of ten years with similar conditions, streamflow volumes will exceed the 20,000 acre-foot forecast.

If users anticipate extremely dry conditions for the remainder of the season, or if they determine the risk of using the 70 percent chance of exceeding forecast is too great, then they might plan on receiving only 5000 acre-feet (from the 90 percent chance of exceeding forecast). Nine out of ten years with similar conditions, streamflow volumes will exceed the 5000 acre-foot forecast.

Using the Lower Exceedance Forecasts. If users expect wetter future conditions, or if the chance that five out of every ten years with similar conditions would produce streamflow volumes greater than 36,000 acre-feet was more than they would like to risk, they might plan on receiving 52,000 acre-feet (from the 30 percent chance of exceeding forecast) to minimize potential flooding problems. Three Out of ten years with similar conditions, streamflows will exceed the 52,000 acre-foot forecast.

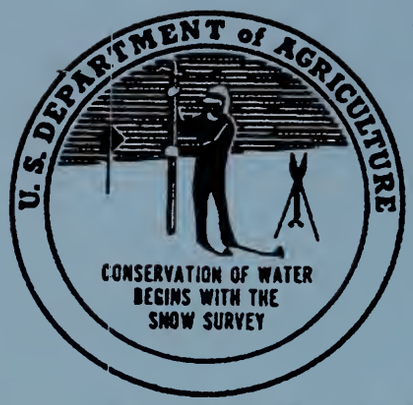
In years when users expect extremely wet conditions for the remainder of the season and the threat of severe flooding and downstream damage exists, they might choose to use the 76,000 acre-foot (10 percent chance of exceeding) forecast for their water management operations. Streamflow volumes will exceed this level only one year out of ten.

WEISER, PAYETTE, BOISE RIVER BASINS
Streamflow Forecasts

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding *						
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
SF PAYETTE RIVER at Lowman	APR-JUL	329	414	471	109	528	613	432
	APR-SEP	369	459	521	107	583	673	488
BOISE RIVER near Twin Springs (1)	APR-JUL	443	610	685	109	760	927	631
	APR-SEP	495	670	750	109	830	1005	

For more information concerning streamflow forecasting ask your local NRCS **field** *office for a copy of "A* **Field** *Office Guide* **for** *Interpreting Streamflow Forecasts'.*

AN EQUAL OPPORTUNITY EMPLOYER



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